

THE ASTROPHYSICAL JOURNAL
CONTENTS OF VOLUME 359, PART 1

1990 AUGUST 10, Number 1

	<i>Page</i>	<i>Fiche</i>
THE GROWTH RATE OF A DIPOLE DISTURBANCE IN AN EINSTEIN-DE SITTER UNIVERSE	<i>Ethan T. Vishniac</i>	1
CLASSIFICATION OF GALAXIES ON CCD FRAMES	<i>Sidney van den Bergh, Michael J. Pierce, and R. Brent Tully</i>	4
THE ORIGIN OF THE MASS, DISK-TO-HALO MASS RATIO, AND <i>L-V</i> RELATION OF SPIRAL GALAXIES	<i>Keith M. Ashman</i>	15
GALACTIC ANISOTROPY AND ENERGY EXTREMIZATION	<i>Peter Amendt</i>	23
THE EVOLUTION OF THE INTERSTELLAR MEDIUM IN ELLIPTICAL GALAXIES. I. THE EARLY WIND PHASE	<i>L. P. David, W. Forman, and C. Jones</i>	29
THE GAS/DUST RATIO IN SPIRAL GALAXIES	<i>Nicholas A. Devereux and Judith S. Young</i>	42
BROWN DWARFS AS DARK GALACTIC HALOS	<i>Fred C. Adams and Terry P. Walker</i>	57
THE OPTICAL VARIABILITY OF THE QUASAR 3C 446 ..	<i>Cesare Barbieri, Roberto Vio, Enrico Cappellaro, and Massimo Turatto</i>	63
SHIFTS OF SPECTRAL LINES CAUSED BY SCATTERING FROM FLUCTUATING RANDOM MEDIA	<i>Daniel F. V. James, Malcolm P. Savedoff, and Emil Wolf</i>	67
NEAR-INFRARED IMAGING OF INTERACTING GALAXIES	<i>Howard A. Bushouse and Michael W. Werner</i>	72
BROAD-BAND PROPERTIES OF THE CfA SEYFERT GALAXIES. III. ULTRAVIOLET VARIABILITY	<i>R. A. Edelson, J. H. Krolik, and G. F. Pike</i>	86
X-RAY AND ULTRAVIOLET OBSERVATIONS OF THE SEYFERT GALAXY MCG 8-11-11	<i>A. Treves, G. Bonelli, L. Chiappetti, R. Falomo, L. Maraschi, G. Tagliaferri, and E. G. Tanzi</i>	98
A ROUND DYNAMICAL MODEL OF THE METAL-WEAK STELLAR HALO	<i>Henrik Vedel and Jesper Sommer-Larsen</i>	104
VELOCITY DISPERSION AND THE STELLAR POPULATION IN THE CENTRAL 1.2 PARSECS OF THE GALAXY	<i>K. Sellgren, M. T. McGinn, E. E. Becklin, and D. N. B. Hall</i>	112
DETECTION OF NITRIC OXIDE IN THE DARK CLOUD L134N	<i>D. McGonagle, L. M. Ziurys, W. M. Irvine, and Y. C. Minh</i>	121
APERTURE SYNTHESIS OBSERVATIONS OF NH ₃ IN OMC-1: FILAMENTARY STRUCTURES AROUND ORION-KL	<i>Yasuhiro Murata, Ryohei Kawabe, Masato Ishiguro, Koh-Ichiro Morita, Takashi Kasuga, Toshiaki Takano, and Tetsuo Hasegawa</i>	125
APERTURE SYNTHESIS OBSERVATIONS OF MOLECULES IN CRL 2688	<i>Nguyen-Q-Rieu and John H. Bieging</i>	131
ARE THERE OPTICAL COUNTERPARTS TO GAMMA-RAY BURSTS?	<i>Anna N. Zytkow</i>	138
A TIME-DEPENDENT MODEL FOR SYNCHRONIZATION IN CLOSE BINARIES	<i>Jean-Louis Tassoul and Monique Tassoul</i>	155
STRUCTURE AND EVOLUTION OF IRRADIATED ACCRETION DISKS. I. STATIC THERMAL EQUILIBRIUM STRUCTURE	<i>Y. Tuchman, S. Mineshige, and J. C. Wheeler</i>	164
STRUCTURE AND EVOLUTION OF IRRADIATED ACCRETION DISKS. II. DYNAMICAL EVOLUTION OF A THERMALLY UNSTABLE TORUS	<i>S. Mineshige, Y. Tuchman, and J. C. Wheeler</i>	176
MODULATION OF PULSAR SIGNALS BY DEFORMATION OF THE STAR	<i>Norman K. Glendenning</i>	186
THREE MICRON SPECTROSCOPY OF LOW-MASS PRE-MAIN-SEQUENCE STARS	<i>Shuji Sato, Tetsuya Nagata, Masuo Tanaka, and Tetsuo Yamamoto</i>	192
A 190 SECOND PERIODICITY IN THE OPTICAL EMISSION OF THE ENIGMATIC X-RAY SOURCE GX 339-4	<i>T. Steiman-Cameron, J. Imamura, J. Middleditch, and J. Kristian</i>	197

CONTENTS

	Page	Fiche
IH 0709-360: A CATACLYSMIC VARIABLE WITH AN ORBITAL PERIOD INSIDE THE "PERIOD GAP" <i>I. R. Tuohy, R. A. Remillard, R. J. V. Brissenden, and H. V. Bradt</i>	204	136-E9
POLARIZATION VARIABILITY AMONG WOLF-RAYET STARS. VI. LINEAR POLARIMETRY OF THE ECLIPSING BINARY V444 CYGNI <i>Carmelle Robert, Anthony F. J. Moffat, Pierre Bastien, Nicole St.-Louis, and Laurent Drissen</i>	211	136-F3
THE TEMPERATURE OF THE COSMIC BACKGROUND RADIATION: RESULTS FROM THE 1987 AND 1988 MEASUREMENTS AT 3.8 GHz <i>Giovanni De Amici, Marc Bensadoun, Marco Bersanelli, Al Kogut, Steven Levin, George F. Smoot, and Chris Witebsky</i>	219	136-G1
PROMINENCE FORMATION IN A CORONAL LOOP <i>Y. Mok, J. F. Drake, D. D. Schnack, and G. Van Hoven</i>	228	136-G11
COMPARISON OF SOLAR p -MODE OSCILLATIONS IN SURFACE BRIGHTNESS AND VELOCITY <i>K. G. Libbrecht</i>	232	137-A1
ESTIMATION OF TOTAL IRRADIANCE VARIATIONS WITH THE CCD SOLAR SURFACE PHOTOMETER <i>Jun Nishikawa</i>	235	137-A5
ELECTRON ENERGY LOSS SPECTROMETRY OF INTERSTELLAR DIAMONDS <i>Thomas J. Bernatowicz, Patrick C. Gibbons, and Roy S. Lewis</i>	246	137-B5
ERRATUM		
DETECTION OF PARITY OF A BINARY STAR IN TRIPLE CORRELATION SPECKLE INTERFEROMETRY. I. SIGNAL-TO-NOISE RATIO: ERRATUM <i>S. N. Karbelkar</i>	256	137-C1

1990 AUGUST 20, Number 2

WHEN DID CORES OF CLUSTERS OF GALAXIES FORM?..... <i>Eyal Maoz</i>	257	139-C1
PRIMORDIAL INHOMOGENEITIES IN THE EXPANDING UNIVERSE. IV. PECULIAR VELOCITY PROFILES AT LATE TIMES <i>Donald W. Olson and J. C. Strickland</i>	263	139-C9
PRODUCTION OF THE LIGHT ELEMENTS IN PRIMORDIAL NUCLEOSYNTHESIS <i>T. Kajino and R. N. Boyd</i>	267	139-D1
SUPERNOVA RATES AND GALAXY INCLINATIONS <i>Sidney van den Bergh and Robert D. McClure</i>	277	139-D13
IRAS GALAXIES AND THE LARGE-SCALE STRUCTURE IN THE CfA SLICE <i>Arif Babul and Marc Postman</i>	280	139-E4
COMPACT RADIO CORES IN EXTREMELY LUMINOUS FAR-INFRARED GALAXIES <i>R. P. Norris, D. A. Allen, R. A. Sramek, M. J. Kesteven, and E. R. Troup</i>	291	139-F1
BL LACERTAE VARIABILITY AND SUPERLUMINAL MOTION VIA A HELICAL FILAMENT/SHOCK INTERFACE <i>Alexander Rosen</i>	296	139-F8
AN OPTICAL COUNTERPART OF THE GIANT H I CLOUD H I 1225+0146 <i>Richard G. McMahon, Michael J. Irwin, Riccardo Giovanelli, Martha P. Haynes, Arthur M. Wolfe, and C. Hazard</i>	302	139-G1
AN ANALYSIS OF G-BAND STRENGTHS IN NGC 6397 AND M55 RED GIANTS <i>Michael M. Briley, R. A. Bell, Susan Hoban, and R. J. Dickens</i>	307	139-G10
A CO SURVEY OF REGIONS AROUND 34 OPEN CLUSTERS. II. PHYSICAL PROPERTIES OF CATALOGED MOLECULAR CLOUDS <i>D. Leisawitz</i>	319	140-A10
A SIGNATURE OF THE INTERMITTENCY OF INTERSTELLAR TURBULENCE: THE WINGS OF MOLECULAR LINE PROFILES <i>E. Falgarone and T. G. Phillips</i>	344	140-C9
HYDROXYL EMISSION IN TRANSLUCENT MOLECULAR CLOUDS <i>Loris Magnani and Lisa Siskind</i>	355	140-D8
OPTICAL POLARIZATION MAPS OF STAR-FORMING REGIONS IN PERSEUS, TAURUS, AND OPHIUCHUS <i>A. A. Goodman, P. Bastien, P. C. Myers, and F. Ménard</i>	363	140-E6
A BIPOLAR OUTFLOW IN THE GLOBULE LYND 810 <i>Taoling Xie and Paul F. Goldsmith</i>	378	140-F9
THE EXCITATION OF 12 MICRON EMISSION FROM VERY SMALL PARTICLES <i>K. Sellgren, L. Luan, and M. W. Werner</i>	384	140-G1
LARGE PLANETARY NEBULAE AND THEIR SIGNIFICANCE TO THE LATE STAGES OF STELLAR EVOLUTION <i>James B. Kaler, Richard A. Shaw, and Karen B. Kwitter</i>	392	140-G11

CONTENTS

v

	Page	Fiche
THE DYNAMICS OF THE EXTRAORDINARY MASS-LOSS BUBBLE G2.4+1.4	419	141-C1
DYNAMICAL FRICTION IN BINARY SYSTEMS	427	141-C13
MAGNETIC FIELD DISTRIBUTION IN POLAR CAP MODELS OF GAMMA-RAY BURSTERS		
Z. Bagoly, P. Mészáros, and S. M. Matz	438	141-D12
SPIN-DOWN OF RAPIDLY ROTATING NEUTRON STARS	444	141-E6
THE STABILITY OF AN ACCELERATING SHOCK WAVE IN AN EXPONENTIAL ATMOSPHERE	463	141-F13
STUDIES IN ASTRONOMICAL TIME SERIES ANALYSIS. IV. MODELING CHAOTIC AND RANDOM PROCESSES WITH LINEAR FILTERS	469	141-G7
THE TEMPERATURE SCALE OF HOT DA WHITE DWARFS: TEMPERATURES FROM FAR-ULTRAVIOLET CONTINUUM FLUXES	483	142-A10
THE EXTREME ULTRAVIOLET SPECTRUM OF G191-B2B AND THE IONIZATION OF THE LOCAL INTERSTELLAR MEDIUM	499	142-C1
THE INFLUENCE OF OORT CLOUDS ON THE MASS AND CHEMICAL BALANCE OF THE INTERSTELLAR MEDIUM		
S. Alan Stern and J. Michael Shull	506	142-C10
A TWO-COMPONENT VOLATILE ATMOSPHERE FOR PLUTO. I. THE BULK HYDRODYNAMIC ESCAPE REGIME		
L. Trafton	512	142-D4
THE BEHAVIOR OF BEAMS OF RELATIVISTIC NONTHERMAL ELECTRONS UNDER THE INFLUENCE OF COLLISIONS AND SYNCHROTRON LOSSES	524	142-E4
THE HARD X-RAYS AND GAMMA RAYS FROM SOLAR FLARES	541	142-F9
SIPHON FLOWS IN ISOLATED MAGNETIC FLUX TUBES. III. THE EQUILIBRIUM PATH OF THE FLUX-TUBE ARCH		
John H. Thomas and Benjamin Montesinos	550	142-G6
THE NONUNIFORM MAGNETOHYDRODYNAMIC NATURE OF THE SOLAR CORONA. IV. EFFECT OF MAGNETOGRAVITY INTERACTIONS	560	143-A4
SEARCH FOR NEUTRINO EVENTS IN THE KAMIOKANDE II DETECTOR IN CORRELATION WITH THE SOLAR FLARE ACTIVITY IN 1989 MARCH		
K. S. Hirata, T. Kajita, T. Kifune, K. Kihara, M. Nakahata, K. Nakamura, S. Ohara, N. Sato, Y. Suzuki, Y. Totsuka, Y. Yaginuma, M. Mori, Y. Oyama, A. Suzuki, K. Takahashi, H. Takei, T. Tanimori, M. Koshiba, T. Suda, T. Tajima, K. Miyano, H. Miyata, M. Yamada, Y. Fukuda, K. Kaneyuki, Y. Nagashima, M. Takita, E. W. Beier, L. R. Feldscher, E. D. Frank, W. Frati, S. B. Kim, A. K. Mann, F. M. Newcomer, R. Van Berg, and W. Zhang	574	143-B6
ABSTRACTS OF THE ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES, 1990 SEPTEMBER ISSUE		
THE KINEMATICS OF ABELL CLUSTERS	578	143-C1
THE PROPERTIES OF LYMAN LIMIT ABSORBING CLOUDS AT $z = 3$: PHYSICAL CONDITIONS IN THE EXTENDED GASEOUS HALOS OF HIGH-REDSHIFT GALAXIES	578	143-C1
THE THIRD MIT-GREEN BANK 5 GHz SURVEY		
Mark Griffith, Glen Langston, Mike Heflin, Sam Conner, Joseph Lehár, and Bernard Burke	579	143-C2
A CATALOG OF SMALL-DIAMETER RADIO SOURCES IN THE GALACTIC PLANE		
S. Zoonematkermani, D. J. Helfand, R. H. Becker, R. L. White, and R. A. Perley	579	143-C2
THE EVOLUTION OF INTERMEDIATE-MASS STARS THROUGH THE H- AND He-BURNING PHASES		
Vittorio Castellani, Alessandro Chieffi, and Oscar Straniero	579	143-C2
PHOTOMETRY OF 50 SUSPECTED VARIABLE STARS	580	143-C3
EXACT EXPRESSIONS AND IMPROVED APPROXIMATIONS FOR INTERACTION RATES OF NEUTRINOS WITH FREE NUCLEONS IN A HIGH-TEMPERATURE, HIGH-DENSITY GAS	580	143-C3
OBSERVATIONS OF DOUBLE STARS AND NEW PAIRS. XIV.		
W. D. Heintz	580	143-C3
RELATIVISTIC FREE-FREE GAUNT FACTOR OF THE DENSE HIGH-TEMPERATURE STELLAR PLASMA. II. CARBON AND OXYGEN PLASMAS		
Naoki Itoh, Koichi Kojo, and Masayuki Nakagawa	581	143-C4
A NEW SYSTEM OF PRECISE FULL-DISK SOLAR SURFACE PHOTOMETRY	581	143-C4
INDEX TO VOLUME 359, PARTS 1 AND 2		See Part 2